

REMARKS

Claims 1 and 72 have been amended. Subsequent to the entry of the present amendment, claims 1, 3-18 and 72-85 are pending and at issue. These amendments and new claims add no new matter as the claim language is fully supported by the specification and original claims.

I. Rejections Under 35 U.S.C. § 103(a)

A. Claims 1, 3-6, 8-18 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sun. (6780648) in view of Sollbohmer (2002/0051737). Applicants respectfully traverse this rejection.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify a reference or to combine the teachings of multiple references. Second, there must be a reasonable expectation of success. Third, the prior art must teach or suggest all of the recited claim limitations. Of course, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure.

Applicants have amended claim 1 to point out that the pressurized fluid delivery subsystem includes a plurality of reagent containers, with each reagent container being configured to receive pressurized air such that the liquid reagent within the reagent container is subject to substantially constant pressure for dispensing the liquid reagent. Support for this amendment can be found throughout the specification, see for example in paragraph [0052].

The Office Action at page 4 admits that "Sun and Sollbohmer fails to teach air pressurization". Therefore, Sun in view of Sollbohmer fails to "teach or suggest all of the recited claim limitations". Accordingly, Applicants respectfully request withdrawal of this rejection to claims 1, 3-6, 8-18 under 35 U.S.C. § 103(a). Applicants will discuss amended claim 1 with air pressurization below.

B. Claims 7, 72-85 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sun and Sollbohmer as applied to claims 1-6, 8-18 above, and further in view of Peck et al and/or Krug et al. Applicants respectfully traverse this rejection.

Applicants have amended claim 1 to include air pressurization, so the arguments presented below will also apply to claims 1, 3-6, 8-18.

Applicants have amended claim 72 to point out that the self-contained pressurized fluid delivery subsystem includes a plurality of reagent containers containing a liquid reagent, with each reagent container being configured to receive pressurized air such that the liquid reagent within the reagent container is subject to substantially constant pressure for dispensing the liquid reagent.

The Office Action correctly points out on page 4 that “Sun and Sollbohmer fails to teach air pressurization”. The Office Action alleges that “Peck et al teaches a dispenser similar to that of Downs, including gas pressure to pump fluids from containers through lines to dispensers (Fig. 2)” and “Krug et al teaches a dispenser similar to that of Downs, including gas pressure to pump fluids from containers through lines to dispensers (Fig. 1).” The Office Action further alleges that it would have been “obvious to one of ordinary skill in the art to use gas pressurization to pump fluid to a dispenser tip in the apparatus of Sun and Sollbohmer in order to provide an alternative method of fluid pumping in a dispensing device as taught by Peck and/or Krug.” Applicants would like to point out that a rejection based on Downs is not part of this Office Action.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify a reference or to combine the teachings of multiple references. Second, there must be a reasonable expectation of success. Third, the prior art must teach or suggest all of the recited claim limitations. Of course, the teaching or

suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure.

First, Applicants assert that there is no motivation to combine references. Both Sun and Sollbohrmer already include a pump for moving fluid in the system between the fluid container and dispensing tip by positioning pumps in between them, there is no need for an alternate method using gas pressurization to pump fluid to the dispenser tip, as suggested in the Office Action. Sun discloses a chemical reservoir 26 connected to a syringe 14 via a three way valve 34 with a plunger 40 within a chamber 42 (i.e., a pump). In use, the three way valve 34 is positioned to connect the chemical reservoir 26 with the chamber 42. The plunger 40 is withdrawn in the chamber 42 and fluid flows from the chemical reservoir 26 flows into the chamber 42. The three way valve 34 is then positioned to connected the chemical reservoir 26 with the syringe 14. The plunger 40 is pushed forward and fluid flows from chamber 42 to the syringe 14 for dispensing (Sun, col. 3, lines 12-38). Sollbohrmer discloses a storage container 24 coupled to micropumps 46 for dispensing test fluid from the dispensers 12 (Sollbohrmer, paragraph [0045]). Since each of these systems includes a pump between the fluid container to the dispensing tip for moving them, there is no reason or motivation to add gas pressurization to these systems to pump fluid to the dispenser tip. With the pump positioned between the fluid container and dispensing tip, pressurizing the fluid container would not alter the operation of either the Sun or Sollbohrmer system, the fluid would move only when the pump between the fluid container to the dispensing tip is operating. Accordingly, there is no motivation to combine the references.

Second, Applicants assert that there is no reasonable expectation of success in the proposed combination. As shown above, both the Sun and Sollbohrmer systems include a pump between the fluid container and dispensing tip and in operation, the fluid would move only when the pump is operating. So even if the fluid containers were pressurized, it would not alter the operation of either the Sun or Sollbohrmer system, the fluid would move between the fluid container to the dispensing tip only when the pump is operating. In addition, a pressurized

container would be required to hold the fluid. It is unclear if the containers in Sun and Sollbohmer are capable of pressurization. Pressurizing the fluid container may be harmful components in the system, including the fluid container and the pump. Accordingly, there is no reasonable expectation of success in the proposed combination.

Finally, Applicants assert that the references do not teach or suggest all of the recited claim limitations. Claims 1 and 72 require "dispensing tips being collectively arranged in a rectangular array". The rectangular array is an important feature of the system and there are many advantages discussed in the specification, such as in paragraph [0020]:

"For simplicity, a rectangular array is 2x2 disclosed, which allows for dispensing of 2 or more reagents substantially simultaneously into 4 corresponding microplate wells in a highly efficient manner. Thus, the 2x2 arrangement generally produces results 4 times as fast as the single-tip design, yet is compact enough that the dispensing tips do not collide with the raised perimeter wall (also referred to as a "raised skirt") of industry-standard microplates when dispensing reagents in a switchback pattern as described herein. The compact rectangular dispensing tip design is an especially significant feature for avoiding the raised skirt when using on-the-fly dispensing, as described herein, which requires dispensing tips to occupy the border area, the area between the outer microplate wells at the perimeter of the well field and the microplate's perimeter walls. Thus, when using an on-the-fly dispensing technique, the 2x2 geometric arrangement of dispensing tips, and mechanical structures associated therein, including discrete fluid paths, together optimize speed of dispensing while reducing dead volume and system complexity and maintaining an acceptable coefficient of variation (CV).".

None of the prior art references include tips arranged in a rectangular array, as required in the present claims. Accordingly, the references do not teach or suggest all of the recited claim limitations.

For at least the reasons discussed above, Applicants respectfully request withdrawal of the rejection of the claims under 35 U.S.C. § 103(a).

In the Application of:
Coassin et al.
Application No.: 10/789,183
Filed: February 26, 2004
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PATENT
Attorney Docket No.: AURO1420-1

II. Conclusion

In view of the above amendments and remarks, reconsideration and favorable action on all claims are respectfully requested. In the event any matters remain to be resolved, the Examiner is requested to contact the undersigned at the telephone number given below so that a prompt disposition of this application can be achieved.

A check in the amount of \$60 is enclosed as payment for a One-Month Petition for Extension of Time fee. A check in the amount of \$180.00 is enclosed as payment for the Information Disclosure Statement fee. Applicants do not believe any other fees are due in connection with this Response. However, the Commissioner is hereby authorized to charge any fees that may be associated with this communication, or credit any overpayment to Deposit Account No. 07-1896, referencing the above-identified attorney docket number. A copy of the Transmittal Sheet is enclosed.

Respectfully submitted,

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